



CASE STUDY

SAVING ENERGY IN MARYLAND

Energy-Efficient Remodel in Bethesda

Bethesda, Maryland

Peter and Lucy Lowenthal's house was built in 1942 with three small bedrooms. Since purchasing the house in 1987, Peter and Lucy have added two additions and many energy efficiency and renewable energy features. The energy improvements provide increased comfort, energy savings, and environmental benefits.

With U.S. Department of Energy assistance, the Lowenthals installed both solar electric (photovoltaic (PV) cells and solar hot water heating systems. About 35% of the electricity used in the home is generated by the PV system. Solar also supplements their hot water and heating needs. "Our family enjoys the comfort and security of renewable energy," said Lucy, "it's a great feeling to know that a lot of the light we read by and the hot water that keeps us warm are provided by the sunshine falling on our roof."

Both renewable and conventional energy are used efficiently at the Lowenthal home thanks to ENERGY STAR® appliances including their refrigerator, clothes washer, and dishwasher. ENERGY STAR qualified products, easily identified by the ENERGY STAR label, are 15% to 30% more energy efficient than traditional consumer appliances.

High-performance, low emissivity (low-E) windows cut down on energy losses from interior, conditioned spaces as does Icynene attic insulation added during the building of an addition. In the renovated basement, an insulated floor with radiant heating keeps the family toasty warm while

utilizing hot water from the rooftop solar collectors. The Lowenthals have seen a decline in their energy bills thanks to the renewable and energy-efficient upgrades. Lucy and Peter estimate they save between \$600 and \$900 per year as a result of the solar energy systems alone. And, as the price of energy from conventional sources rises, the savings continue to increase.

"Not only do we enjoy the savings and comfort offered by our home, but our whole family is very proud to live here," says Peter, "we like to think of our house as an example of how renewable energy and energy efficiency can improve the quality of life for any family, in any community."

HIGH PERFORMANCE FEATURES OF THE LOWENTHAL HOME

- ▶ ENERGY STAR refrigerator, clothes washer, and dishwasher
- ▶ Energy-efficient lighting
- ▶ Icynene attic insulation
- ▶ Low-E windows
- ▶ Radiant floor heating in basement
- ▶ Photovoltaic (PV) and solar hot water heating systems